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FREE COINAGE AND PROSPERITY.

BACK of the demand for the free coinage of silver there is one motive that lends energy to the movement, but, at the same time, takes away its respectability. This is, that the transition from a gold to a silver standard would have an immediate debt-scaling effect. But the demand for such transition derives its permanent strength from a more reputable motive. The advocates of this policy claim that, after we shall have made the change and "readjusted" existing debts, we shall gain a business advantage from the continued use of silver. It will expand the currency, raise prices, stimulate enterprise. The mines of the world will be drawn upon for both gold and silver; and this will mean a twofold source of new money for use among the nations.

This argument is ethically more creditable than the former; but, in the shape just presented, it is less creditable intellectually. For the extent to which any currency is capable of raising prices by a continued expansion depends, not on the absolute amount of that expansion, but on the percentage of enlargement that takes place within a given time. If the gold and the silver of the world were each to increase by one per cent a year, a currency made of one metal would have the same permanent effect on the trend of prices as a currency made of both. *In the transition* from a gold to a bimetallic currency, we should get rapidly rising prices; after the change had been completed, we should have a currency expanding as before at the one per cent rate. If the volume of business were to increase at the rate of two per cent a year, while other influences affecting prices were to remain unchanged, the currency would not expand as rapidly as the demand for it, and prices not only would fall, but would fall at the same rate as if only one metal had been used. Use ten metals instead of two — make coins of tin, platinum, copper, nickel, *etc.*, and if the grand composite still keeps the one per cent rate of general increase, prices will vary as they would have varied with a currency of gold alone. Wholly transitional, under such circumstances, is the rise in prices secured by the adoption of bimetallism. It is gained by adding to the stock of gold now used for ultimate payments an existing stock of silver.

The argument becomes intelligent when it claims that silver is likely to increase more rapidly than gold. If so, a money that is made of silver will more nearly keep pace, in its rate of increase, with the volume of business. Two general facts, therefore, need to be noted. The first is that, in the long run, almost any metallic coin of a fixed weight will gain in its purchasing power. Silver would do this as well as gold ; and so would a composite coinage made of ten metals. The law of diminishing returns applies to mining as well as to agriculture. The more silver you want, the deeper you must dig for it, and the more refractory ores you must smelt. The transmuting of a raw metal into finished articles becomes a cheaper and cheaper process ; but the extracting of the metal itself becomes dearer. A larger and larger fraction of the labor that is spent in making wares of silver, of gold, of copper or of tin must be spent in getting the crude material out of the earth. There are improvements in mining, as there are in other industries ; but in spite of them, the continual working of more difficult mines and of more difficult ores makes the getting of the crude material, in the long run, relatively costly. Since a coin consists chiefly of raw metal,[1] we may therefore count on having before us a régime of falling prices, whatever metallic currency we adopt. The rate of the fall and the degree of steadiness in it will be greater with some metals than with others. The variations in the value of gold are, on the whole, comparatively steady. This metal fluctuates in amount and in cost ; but the changes are less sudden than in the case of other metals.

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[1] Of course it is true that the volume of a currency affects prices. It should not be necessary here to prove that, through changes of volume, the purchasing power of a coin is made to conform to the value and the cost of the bullion of which it is composed. It is at least clear that when a man can coin his gold at pleasure, he can buy with the coin about as much as he can get in exchange for the bullion.

The second of the facts to be noted is that the prosperity of business requires, not a currency that shall remain unchanged in its purchasing power, but one that shall change, if at all, at a comparatively uniform rate. This fact is of paramount consequence, and the verification of it will repay any amount of study. It is not the rapidity with which gold gains in purchasing power, but the steadiness of the gain from year to year, that determines whether it is the best money that can be had by the business world.

A change in the *rate* of increase in the purchasing power of the coinage metal has a really disturbing effect; a steady and calculable appreciation does not. There exists in some acute minds what I venture to call a delusion about the effect on business classes of an advance in the purchasing power of gold that proceeds at a uniform rate. Conceding the prospect of a decided gain in the value of this metal, I deny absolutely that, *if it is steady and calculable*, it plays into the hands of creditors, burdens the *entrepreneur*, blights enterprise, or has any of the effects that certain men whom I am bound to respect have claimed for it. Irregular changes of value would, indeed, produce these results. Let gold gain three per cent in value this year, one per cent next year, and four per cent in the year following, and serious things will happen; but let it gain even as much as three per cent each year for a century, and at the test points in business life there will ensue the essential effects that would have followed if it had not gained at all.

This means that with a steadily appreciating currency the things will happen that make for prosperity. The debtor will get justice, enterprise will be safe, and wages will gain while industry gains. The *entrepreneur*, in whose behalf bad counsel has lately been given, will best do his strategic work, not with that currency which varies in value the least, but with that which varies most uniformly. If it appears that gold is likely to appreciate more than silver, and to appreciate more steadily, it is decidedly the better metal. It is not inflation on which the *entrepreneur* permanently thrives, nor is it contraction through which, in the long run, he suffers ; it is changes in the rate of inflation or of contraction that produce marked and damaging effects at the critical points of business life.

How does a slow and steady appreciation of any metallic currency affect the relations of business classes? Does it rob borrowers and enrich lenders? Does it favor the consumers by giving low prices, and hurt producers in the same degree? Does it tax enterprise and paralyze the nerves of business? The answer is an emphatic *No*. Steadiness in the rate of appreciation of money is the salvation of business. Not by one iota can such a slow and steady movement, in itself alone, rob the borrowing class. This is a sweeping claim ; let us examine it.

It is coming to be generally known that true interest is governed by the "marginal productivity" of capital. As the utility of the final increment of a commodity fixes the price that a seller can get for his whole supply, so the productive power of the final unit of capital expresses what the owner of capital can get by lending his entire supply. This earning capacity expresses itself in a percentage of the capital itself. If the final unit can create a twentieth of itself in a year, any unit can get for its owner about that amount.

In assuming that capital earns a twentieth of itself in a year, we may use a commodity standard of measurement. A grocer's capital of twenty barrels of sugar may become twenty-one barrels, and his flour and his tea may increase in a like proportion.[1] In the simplest illustration that could be given of a capital earning five per cent a year, we should assume that each kind of productive instrument in a man's possession increases in quantity, during the year, by that amount. If he be a manufacturer, his mill becomes a hundred and five feet long, instead of a hundred feet. It contains twenty-one sets of woolen machinery, instead of twenty. The flow of water that furnishes power becomes by five per cent more copious ; and the stock of goods, raw, unfinished and finished, becomes larger by the same amount.

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[1] I cannot here express in any completeness the "final productivity" theory of interest. It is safe to assume that it is winning acceptance. One feature of this law of interest is that the productive power of all capital tends to equal that of the marginal *social* unit of it. In the illustration I assume that all capital creates for the man who uses it a twentieth of itself in a year, and that this increase is capable of being measured in kind. A more complete statement would fully describe the unit of measurement used.

Of course such a symmetrical enlargement of all kinds of goods could never actually take place, for some things increase in quantity more than others. The illustration shows, however, what fixes the rate of interest : it is the self-increasing power of a miscellany of real capital. If the mill, the machinery, the stock, grow in quantity at the five per cent rate, that is the natural rate of interest on loans of real capital. The lender gives to the borrower twenty units of "commodity" and gets back twenty-one. If marginal social capital, consisting of commodity and measured in some way in units of kind, has the power to add to itself in a year one unit for every twenty, lenders will claim about that amount, and borrowers will pay it.

How does the real earning capacity of capital in concrete forms reveal itself? How does the grocer know that he can make five per cent with the final unit of capital that he borrows? Not by the fact that each lot of twenty barrels of sugar gains one barrel, that each lot of twenty pounds of tea gains one pound, and so on. If there were to be such a symmetrical all-around increase in the commodities in the man's possession, his shelves, counters, bins, tanks, would have to enlarge themselves in the same ratio. In the case of a manufacturer the mill would have to elongate itself by one foot for every twenty, as in the foregoing illustration, and the machinery and all the stock would have to grow in the same ratio. The land and the water power would have to enlarge themselves by the same constant fraction.

I have said that such a thing does not take place. The general amount of capital goods of every kind enlarges ; but the enlargement is in practice computed in monetary value, and in no other way. The whole outfit becomes worth more than it was. The increase in monetary value gauges the claims of the capitalist. If the stock of goods has grown generally larger, and if prices have fallen, the claim of the capitalist will fall short of equalling the actual increase of the merchandise.

The increase in goods of different kinds is of course unsymmetrical. If the man is a manufacturer, his mill and his water power have probably not increased. He may have some more machinery, and he has more raw materials and more goods, finished or unfinished, than he had when he took his last inventory. If he has not more goods of these kinds, he has something that represents them ; and the effect on his fortunes is as if the mill had stretched itself, and as if the machines and other capital had multiplied, all in the same ratio.

The man figures his gains in real wealth by the use of money. At the end of the year he makes a list of all his goods, attaches prices to them, and sees what the value of the stock has become by the year's business. He compares the total value in money of the goods on hand in January, 1896, with that of the stock of January, 1895. If he has bought and sold for cash only, and if during the year he has drawn for his maintenance only what he has earned by labor, the excess of value on hand at the beginning of the year 1896 informs him what his capital has earned during the preceding twelve months.

If prices have remained stable, the earnings of the capital as expressed in money will accurately correspond with the earnings as computed in commodity. It is as if the five per cent increase of the sugar and the flour of our first illustration, or of the mill and the machinery of the second, had taken place. It could then, by a sale, be converted into a five per cent increase in money. By selling the stock at its market value the merchant could realize five per cent more than the original stock cost him.

If money has gained one per cent in its purchasing power, or if prices at the end of the year are by so much lower, the inventory will show, in terms of money, only a four per cent gain. Now the real increase of concrete capital is still five per cent, and that, by the law of interest, is what the capitalist can claim in commodities. This claim is met by an actual payment in money of four per cent. Give to the capitalist, in January, 1896, a dollar and four cents for every dollar that he loaned in January, 1895, and you enable him to command a hundred and five units of commodity for every one hundred that he commanded at the earlier date. You give him by a reduced monetary payment what is equivalent to the real increase of capital.

It is the increase of capital in kind that fixes the rate of loan interest. I have been careful not to claim for this part of the adjustment any unerring accuracy; for the marginal-productivity law does not work without friction. With real capital creating five and a half per cent, the lender might get only five. When, however, the play of forces that fixes real interest has had its way and has determined that, in commodity, capital shall secure for its owners five per cent a year, that amount is unerringly conveyed to them by the monetary payments that follow. If, by paying four per cent as interest, the merchant, in the illustrative case, makes over to the lender of capital that part of the increase of goods that by the law of interest falls to him, four per cent is the rate that the loan in money will bring. This is on the supposition that the change in the purchasing power of money is perfectly steady. If it is unsteady, effects will follow that are of much consequence.

In a late number of this QUARTERLY,[1] I expressed the opinion that changes in the purchasing power of a currency produce an effect on the rate of interest on loans of "money." If, with a currency of perfectly stable value, the interest on loans is five per cent, corresponding to the earnings of real capital, then a gain in the purchasing power of the currency of one per cent a year has the effect of reducing nominal interest to four per cent. The debtor then really pays and the creditor really gets the same percentage as before of the actual capital loaned. The borrower, the *entrepreneur* in the case, finds at the end of the year that he has more commodities by five one-hundredths than he had. He must pay the equivalent of this to the lender.[2] With money of stable purchasing power it takes five new dollars for every hundred to do it; but with money that gains in its power to buy goods at the rate of one per cent a year it takes only four.

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[1] Vol. x, p. 389 (September, 1895).

[2] Of course the gains of different *entrepreneurs* vary. It is the earnings of marginal social capital that really determines interest.

Since this view was submitted, an acute critic[1] has expressed the opinion that the rate of interest on loans is, indeed, varied because of the appreciation of the coin, and that the variation is in the direction indicated ; but he has claimed that the variation is not as great as the appreciation of the coin. He has cited statistics to prove that gold has recently gained in purchasing power, that the rate of loan interest has been reduced because of this gain, and that the amount of the reduction is only about a third as great as the amount of the appreciation of gold. Where the gain in the purchasing power of money would theoretically call for a certain lowering of the nominal rate of interest, the facts cited appear to show that interest has been lowered, but by a smaller amount.

Now without meeting this contention with a *tant pis pour les faits*, I propose to reassert the former doctrine, and to claim that the rate of interest on loans is, in the long run, reduced by an amount that accurately corresponds with the appreciation of the monetary metal *wherever the appreciation is steady.* This law, as I believe, works with a precision that is unusual in the case of economic laws ; and I have seen no facts cited which do not seem to me to be consistent with this view. Loan interest varies more or less from the marginal earnings of capital. Interest as paid in money accurately expresses interest as determined in kind by the play of economic forces.

It is possible that, where this subject has been considered, the impression may prevail that this reduction in the nominal rate of interest is the result of foresight on the part of borrower and lender. According to that view, both parties look forward to the time when the loan will be paid. The borrower sees that, although by means of his business he may have at the end of a year five per cent more of commodity in his possession, prices will probably have fallen so as to enable him to realize in money only four per cent. On the other hand, the creditor will see that with four per cent more in money he can, if he will, buy with his principal and interest five per cent more than he virtually loaned in commodity. He is satisfied with this increase ; and, moreover, he is forced to accept it, since the natural increase of real capital will not enable a borrower to pay more. The *entrepreneur* will quit borrowing if more is demanded. The whole adjustment is supposed to rest on a forecast made by the contracting parties, and a speculative calculation as to the trend of prices. Now, while men do indeed consider the future, the adjustment that is actually made does not call for foresight. No conscious forward glance is necessarily involved therein. It is made by a process that works more unerringly than any joint calculation about the coming conditions could possibly do.

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[1] The criticism referred to was made by Professor Irving Fisher of Yale University, in a paper read before the American Economic Association, at the annual meeting lately held at Indianapolis.

The interest on a loan that is to run through a period in the near future is based on the rate that capital is now producing. The evidence as to what that rate is must be furnished by the experience of the immediate past. It takes much experience, of course, accurately to determine how much the marginal unit of capital for the year 1895 has been worth to the men who have used it. This, however, has to be ascertained as best it can. It takes strategy on the part of both borrowers and lenders to make the loan rate correspond to the marginal earnings. Here there is a chance for economic friction, and for variations from the theoretical standard. The loan rate will sometimes fall short of the marginal earnings of capital, and it will sometimes exceed it ; but in the long run the deviations will offset each other. In any case, the experience of 1895 fixes, with or without variations, the loan rate for 1896.

The earnings revealed by the experience of 1895 may be theoretically computed either in money or in commodity. Let us say they have been five per cent in real wealth, but by reason of the fall in prices they have been only four per cent in money. That, then, is the rate for a loan that is to run through 1896. If prices continue to fall at the rate now prevailing, the loan rate in money will correspond to the marginal earnings of capital for the latter year as accurately as it does for the former year.

Bargain-making strategy, the "higgling of the market," may yield an imperfect result, and the lender of real or commodity capital may or may not get the exact real earnings of marginal capital of the same kind. *In translating the earnings of real capital for the earlier or test year into terms of money, the appreciation of the coins has unerringly entered as an element.* If the same rate of appreciation is continued through the following year no deviation of the loan rate from the earnings of capital can result from this cause. Whatever deviation there is results from the other causes just noted.

In commercial terms a man borrows "money," and, by using it in his business, produces "money." He does this, however, by converting the currency into merchandise, and then reconverting this into currency. He gives to the lender approximately what the "marginal" part of the loan produces. If this adjustment is inexact, the lender will get less or more than the actual earnings of such capital. With money gaining in its purchasing power at a uniform rate, the adjustment is as exact as it would have been with money of stable value. The appreciation works unerringly in translating earnings measured in goods into smaller earnings measured in money. The loan rate approximates the earnings.

What happens if the rate of appreciation changes? What if gold gains two per cent in value, instead of one, during the second of the periods? The capitalist will then clearly be a gainer, and the *entrepreneur* will be a loser. Getting five per cent in commodity as before, the business man, by reason of falling prices, will realize only about three per cent in money. His contract, based on the experience of an earlier year, makes him pay four per cent, and he loses one. Every acceleration of the rate of increase in the purchasing power of money plays into the hands of lenders. Every retarding of that rate plays into the hands of borrowers. If in 1897 the *entrepreneur* gets a three per cent rate on what he borrows, as based on the experience of 1896, and if the fall in prices is reduced during that later year to one per cent, the borrower will make a clear gain of one per cent; and this will recoup him for his loss in the earlier period. Moreover, after a long period of steady prices, the beginnings of a downward trend do not instantly affect the loan rate of interest. A period must elapse sufficient to establish the fact of this downward trend, and to enable the struggles of lenders and borrowers to overcome habit in fixing a new rate that will correspond to the new earning power of monetary capital. These facts explain what at times looks like a failure of the loan market fully to take account of the fall of prices during a given interval. What that market really does is to base the interest paid in one interval on the business experience of another.

What, then, is our practical conclusion? Gold is gaining in its purchasing power; and the gain is, comparatively speaking, a steady one. Does this rise rob the debtor? In any case he must pay the marginal rate that real capital earns. If that is five per cent, five he must pay, so long as prices are stable. With prices falling by one per cent a year, he will pay only four.

Does the fall check enterprise? Does it make men afraid to buy stocks of goods? They can carry stocks as cheaply with a four per cent rate of interest and declining prices as they can with a five per cent rate and stable prices.[1]

Does it blight enterprise? Does it make men afraid to build mills, railroads, *etc.*? Here again the loan rate of interest comes to the rescue of the projectors. If they can float their bonds and notes at a lower rate, they can build with impunity.

Steadiness is the vital quality in currency. Let its purchasing power be either unchanging or steadily changing in either direction, and justice will be done and business will thrive. If silver fluctuates greatly in its rate of increase in value, it is a bad coinage metal, even though the average rate of gain be slow; if gold gains slowly and steadily, it is an almost ideally good metal.

JOHN B. CLARK.

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[1] Particular kinds of goods often fall in value so rapidly as to make it perilous to buy freely; but it is a rare situation in which merchandise of all kinds does so. A rapid change from depreciated paper money to a gold standard might, however, transiently produce this latter condition. The fall in prices might be so great as to exceed the total earning capacity of real capital. Then it could not be counteracted by changes in the rate of interest.